

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. Contract ID Code Cost-Plus-Fixed-Fee		Page 1 Of 3	
2. Amendment/Modification No. P00002		3. Effective Date 2004JAN08		4. Requisition/Purchase Req No. SEE SCHEDULE		5. Project No. (If applicable)	
6. Issued By TACOM WARREN BLDG 231 AMSTA-AQ-ABGD-W NEIL WILLISTON (586)574-7028 WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: WILLISTN@TACOM.ARMY.MIL		Code W56HZV		7. Administered By (If other than Item 6) DCMA BAE SYSTEMS PO BOX 0868 NHQ1-505 NASHUA, NH 03061-0868		Code S3001A	
				SCD C PAS S2206A1001APC ADP PT HQ0337			
8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRAT BAE SYSTEMS INFORMATION AND ELECTRONIC WARFARE SYSTEMS 65 SPIT BROOK ROAD NASHUA, NH. 03061-0868 TYPE BUSINESS: Large Business Performing in U.S.				<input type="checkbox"/>		9A. Amendment Of Solicitation No.	
				<input type="checkbox"/>		9B. Dated (See Item 11)	
				<input checked="" type="checkbox"/>		10A. Modification Of Contract/Order No. DAAE07-02-C-L012	
				<input type="checkbox"/>		10B. Dated (See Item 13) 2002SEP27	
Code 94117		Facility Code					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. Accounting And Appropriation Data (If required) Payment will be made by Electronic Funds Transfer NO CHANGE TO OBLIGATION DATA							
13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS							
KIND MOD CODE: 7 It Modifies The Contract/Order No. As Described In Item 14.							
<input type="checkbox"/> A. This Change Order is Issued Pursuant To: The Changes Set Forth In Item 14 Are Made In The Contract/Order No. In Item 10A.							
<input checked="" type="checkbox"/> B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).							
<input type="checkbox"/> C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:							
<input type="checkbox"/> D. Other (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the Issuing Office.							
14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) SEE SECOND PAGE FOR DESCRIPTION							
15A. Name And Title Of Signer (Type or print)				16A. Name And Title Of Contracting Officer (Type or print) JOHN M. HOPFNER HOPFNERJ@TACOM.ARMY.MIL (586)574-7070			
15B. Contractor/Offendor (Signature of person authorized to sign)		15C. Date Signed		16B. United States Of America By _____ /SIGNED/ (Signature of Contracting Officer)		16C. Date Signed 2004JAN08	
NSN 7540-01-152-8070 PREVIOUS EDITIONS UNUSABLE				30-105-02		STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243	

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 2 of 3
	PIIN/SIIN DAAE07-02-C-L012	MOD/AMD P00002	
Name of Offeror or Contractor: BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRAT			

SECTION A - SUPPLEMENTAL INFORMATION
with
PROGRAM: Full Spectrum Active Protection Program

PURPOSE OF MODIFICATION: Incorporate Revision #2 to Work Directive #1

PRIOR CONTRACT AMOUNT: \$400,000.00

THIS ACTION: no increase and no decrease \$0.00

TOTAL CONTRACT AMOUNT: \$400,000.00

1. The purpose of this Modification P00002 is to add Revision #2 with four (4) new Paragraphs, Nos. 10.0 to 13.0, to Work Directive #1.

2. This is a unilateral modification.

3. The contract is hereby modified as follows:

a. Section B is updated to reflect the incorporation of Revision #2 to Work Directive #1.

e. Section J is updated to incorporate the text of Work Directive BAE-0001, Revision #2

4. As a result of this Modification P00002, there is no change in the contract amount.

5. Except as specifically provided for in this Modification P00002, all other terms and conditions of Contract DAAE07-02-C-L012 remain unchanged and in full force and effect.

*** END OF NARRATIVE A 002 ***

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 3 of 3
	PIIN/SIIN DAAE07-02-C-L012	MOD/AMD P00002	
Name of Offeror or Contractor: BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRAT			

SECTION J - LIST OF ATTACHMENTS

List of Addenda	Title	Date	Number of Pages	Transmitted By
Attachment 002	ATTACHMENT #2 REVISION #2 TO WD #1	23-DEC-2003	004	

U.S. ARMY TANK-AUTOMOTIVE
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
(TARDEC)
WORK DIRECTIVE

CONTRACTOR: BAE SYSTEMS INFORMATION AND ELECTRONIC
SYSTEMS INTEGRATION, INC.

CONTRACT NO. DAAE07-02-C-L012

WORK DIRECTIVE NO: Revision #2 To Work Directive #1
BAE-0001

1.0 SCOPE AND CITATION.

This Work Directive describes a particular project to be performed under the contract. In particular, Section C.1.2.2 of the Contract Scope of Work authorizes the effort under this Work Directive.

2.0 BACKGROUND.

The Integrated Defense System (IDS) System Integration Laboratory (SIL) was developed as part of the Hit Avoidance Advanced Technology Demonstrator in TACOM Contract No. DAAE07-95-C-R043. Its purpose is to assess and demonstrate survivability architecture, or Commander's Decision Aid (CDA), for managing hit avoidance sensors and countermeasures. All work under the Work Directive, including submission of Final Report, shall be concluded within 4 months after the Contracting Officer signs the Work Directive.

3.0 TASK OBJECTIVES

- (i) Perform IDS SIL and CDA system design option analysis sufficient to develop at least one (1) but not more than three (3) High Level Architecture (HLA) migration compliance concepts, design recommendations, federation test support requirements and alternative structural/operational design options to support Work Directive Objectives in Section C.1.2 of the Contract Scope of Work. The Contractor's objective in performing this work is to provide insight to the Government regarding what upgrade approach or approaches make the most sense, on technical and financial grounds, to allow the SIL and CDA to effectively support expected work for the FCS and FSAP programs.
- (ii) Develop the capability to modify the existing IDS SIL and CDA to demonstrate the use of Off-Board data, as further described below, to support the RDEC Federation's System of Systems Integrated Survivability Study for the Future Combat System (FCS).
- (iii) Integrate the SIL and CDA into TARDEC's CAT to test the Off-Board data capability in support of the RDEC Federation's System of Systems Integrated Survivability Study.

4.0 TASK DESCRIPTION

4.1 IDS SIL and CDA review and characterization.

The Contractor shall identify attributes of (i) the present IDS SIL system architecture that was developed by the Contractor under Contract No. DAAE07-95-C-R043 and then modified under Contract No. DAAE07-97-C-X073 and (ii) the present CDA (as developed and modified with the SIL as specified above) which are likely pertinent to evolution toward HLA-compliance and support of the Research Development & Engineering Center (RDEC) Federation, FCS and Full Spectrum Active Protection (FSAP) programs, to include 3-Dimensional (3-D) graphical representation of the tactical environment for scenario configuration and data analysis. The Contractor shall:

- (i) Identify significant system and network architectural dimensions/parameters.
- (ii) Establish the qualitative and quantitative values of such attributes.
- (iii) Qualify and quantify the relationship between these attributes and the implications of applying them in the SIL and CDA. This shall be done using an evolutionary process where each level of compliance allows a logical and practical progression to the next level, in support of the RDEC Federation, FCS and FSAP programs. Include the cost to achieve HLA compliance for each attribute and the operational value of such compliance.
- (iv) For each attribute it identifies, the Contractor shall:
 - Define the scope and characterize prospective uses, re-uses and interoperational environments for which HLA compliance may be more or less valuable.
 - Identify significant system and network operational dimensions/ parameters.
 - Establish the qualitative and quantitative values of such attributes.

4.2 IDS SIL and CDA system design option analysis.

The Contractor shall identify prospective alternative 'point' structural designs and operations with respect to the CDA and SIL: Consistent with its findings per task 4.1, the Contractor shall provide a minimum of one (1) recommendation and a maximum of three (3)

recommendations for an IDS SIL and CDA migration pathway or strategy. The recommendation or recommendations will include the prospective alternative 'point' structural designs and operations that appear logical and workable from both cost and performance perspectives. The recommendation(s) for migration of the CDA and each element of the SIL will identify the advantages and disadvantages of the recommendation alternative(s), and will relate to the proposals for migration of the CDA and other SIL elements to ensure consistency and effectiveness, permitting the IDS SIL and CDA supporting HLA-compliant options for the RDEC Federation, FCS and FSAP programs. In the course of its analysis, the Contractor shall:

- (i) Identify and assess at least those alternative migration strategies of the IDS SIL and CDA that would be most readily executable for achieving prospective design end states.
- (ii) Capture and analyze explicit design trade dependencies expected to be pertinent to the selection of alternative evolutionary options.

4.3 IDS SIL and CDA design migration recommendation.

The Contractor shall recommend a design approach for migration of the SIL to comply with HLA standards that it regards as optimal, as well as at least one (1) design alternative indicating for each, to the greatest extent possible:

- (i) Migration strategies, together with an assessment of the respective advantages and disadvantages of each.
- (ii) Recommended end-state design(s) for the SIL and CDA to support interoperability with sensor, countermeasure, threat, environmental and tactical models and simulations that could be used to replace those models and simulations within the SIL.
- (iii) Recommended end-state operations for the SIL and CDA to support future HLA and hit avoidance technologies.
- (iv) Trade dependencies and associated cost-benefits known to have influenced recommended outcomes.
- (v) Decision and execution recommendations.

4.4 Task Coordination

4.4.1 Contractor Participation: The Contractor shall contribute its independent perspective and its in-depth technical appreciation of the DoD's High Level Architecture (HLA) and associated elements of the common technical framework for modeling and simulation, e.g. data standardization and conceptual model of the mission space. The contractor shall particularly coordinate with TARDEC's RDEC Federation POC (Mr. Paul Bunker), FSAP POC's and other participating agencies to determine what current supporting HLA processes are defined and available. FSAP POCs include: Mr. Bryan Beaudoin and Mr. Steve Caito, TARDEC, Mr. Tom Gleason, Gleason Research Associates, Inc. and Mr. Frank Stoddard, TRW Space & Technology Division. Other agencies supporting this Work Directive include CECOM's Night Vision Labs and AMRDEC's Distributed Simulation Office. The Contractor will coordinate with these POCs in such a way as to permit the contractor to develop conclusions, which it then will include in the final report.

4.4.2 Government Participation: The Government COR, FSAP and RDEC Federation POCs will provide technical and software information on HLA requirements for near term IDS SIL, CDA, RDEC Federation and FSAP requirements not later than three weeks after the Contracting Officer signs the Work Directive. This will include sources for IDS SIL models and simulations SIL and CDA performance goals.

4.4.3 Meetings: IAW Section C.3.1 of the Contract Scope of Work, the Contractor shall attend a start of work meeting at TARDEC, Warren, MI. The start of work meeting will review the level of effort and aid in the collection of information from the participants identified above.

4.5 Off-Board Data Capability Development

4.5.1 The Contractor shall develop the capability of the IDS SIL and CDA to support the use of Off- Board data when the modifications can show the following: The CDA, based on reports from the Threat Warner and Off-Board data, will determine the probability that a tank gunflash or missile launch came from a weapon platform within the region of friendlies, then the CDA will pass the report onto the Soldier Machine Interface for improved situational awareness. Off-Board data may provide, as little as, the direction of potential threats and as much as the location, type and intent of threat.

4.5.2 The Contractor shall develop modifications for the IDS SIL to define a region in which friendly forces are located and will pass the location of the friendly forces onto the CDA. The Contractor shall develop the modifications on the duplicate IDS SIL "developmental" hardware/software at their location. Further, the Contractor shall develop and demonstrate updates to the Threat Warning models in the duplicate IDS SIL to detect fire from friendly forces.

4.5.3 Development of the Off-Board data message format and content shall be coordinated with TARDEC's RDEC Federation POC to support SoS Integrated Survivability Study efforts.

4.5.4 Prior to final in-house testing of the Off-Board data capability, the Contractor shall conduct a technical interface meeting (TIM), at the contractor's facilities, with the Government. At the TIM, the Government. will review the proposed changes to the IDS SIL and CDA.

5.0 DELIVERABLES

5.1 The Contractor shall prepare and deliver task documentation IAW DD 1423, to include (i) Performance and Cost Reports, and (ii) Final Technical Reports in the Contractor's format. The information shall cover each of the principal stages of the program of activity to include:

- (i) SIL system and CDA attributes review and evaluation with respect to HLA compliance evolution.
- (ii) SIL and CDA alternative structural/ operational design options and alternatives.
- (iii) Recommend design evolution strategies and implications.
- (iv) Summary of the modifications/additions made to the IDS SIL and CDA software for the Off-Board data demonstration.

6.0 PERIOD OF PERFORMANCE

All effort on this Work Directive, including preparing and submitting the HLA migration analysis draft Final Report and Final Report, will be completed by 30 August 2004. The draft Final Report for the HLA analysis will be submitted by 30 April 2003, the Government will have 30 days after receipt to provide comments back to the Contractor, and the Contractor will submit the Final Report 30 days after the Off-Board data demonstration by 30 August 2004.

7.0 ESTIMATED HOURS AND TRAVEL:

Systems Engineering: 1700 hours
Program Manager: 300 hours
Total: 2000 Hours

Work Directive #1, Revision #1 adds:

TRAVEL: \$1800 (2 people for 1 day)

8.0 REVISION #1 ESTIMATED COMPLETION DATE: 30 August 2004

9.0 REVISION #2 to Work Directive #1 (Modification P00002) adds new Paragraphs No.10.0 thru 14.0 as follows:

10.0 Add the following Paragraph 4.5 to Work Directive #1

4.5 Off-Board Data Capability Development

4.5.1 The Contractor shall develop the capability of the IDS SIL and CDA to support the use of Off- Board data when the modifications can show the following: The CDA, based on reports from the Threat Warner and Off-Board data, will determine the probability that threat tank gunflash or missile launch came from a weapon platform within the region of friendlies, then the CDA will pass the report onto the Soldier Machine Interface for improved situational awareness. Off-Board data may provide, as little as, the direction of potential threats and as much as the location, type and intent of threat.

4.5.2 The Contractor shall develop modifications for the IDS SIL to define a region in which friendly forces are located and will pass the location of the friendly forces onto the CDA. The Contractor shall develop the modifications on the duplicate IDS SIL "developmental" hardware/software at their location. Further, the Contractor shall develop and demonstrate updates to the Threat Warning models in the duplicate IDS SIL to detect fire from friendly forces.

4.5.3 Development of the Off-Board data message format and content shall be coordinated with TARDEC's RDEC Federation POC to support SoS Integrated Survivability Study efforts.

4.5.4 Prior to final in-house testing of the Off-Board data capability, the Contractor shall conduct a technical interface meeting (TIM), at the contractor's facilities, with the Government. At the TIM, the Government will review the proposed changes to the IDS SIL and CDA.

11.0 Delete the following Paragraph 5.2 in Work Directive #1

5.2 The Contract shall provide software, hardware and technical support to develop the use of Off-Board data as an interim effort. Delivery of the updated Off-Board data IDS SIL and CDA software is not required in this Work Directive. A Work Directive for final software modification delivery/installation in this contract will include delivery of software developed/modified under this Work Directive.

12.0 Modify the dates in Paragraph #6.0 of Revision #1 to Work Directive #1 as follows:

All effort on this Work Directive, including preparing and submitting the HLA migration analysis draft Final Report and Final Report, will be completed by 30 August 2004. The draft Final Report for the HLA analysis will be submitted by 30 April 2004, the Government will have 30 days after receipt to provide comments back to the Contractor, and the Contractor will submit the Final Report 30 days after the Off-Board data demonstration by 30 August 2004.

13.0 Add in Paragraph #8 of Revision #1 to Work Directive #1 the following:

REVISION #2 ESTIMATED COMPLETION DATE: 30 AUGUST 2004

14.0 CONCURRENCE:

Contracting Officer's Technical Representative: _____
Date:

15.0 APPROVAL:

CONTRACTING OFFICER: Date:
John M. Hopfner